

WHAT IS CLAIMED IS:

1. A spread-spectrum signal receiver for receiving a signal obtained by rendering transmit data and control data, which have been modulated at powers that differ from each other, into signals that do not influence each other, multiplexing these signals and transmitting the multiplexed signal, the apparatus comprising:

10 a despreader for despread ing a receive signal to thereby demodulate a control-data signal and a transmit-data signal;

a channel estimation unit for deriving a channel estimation value from a pilot signal that is contained in the control-data signal;

15 a channel compensation unit for performing channel compensation of the transmit-data and control-data signals based upon the channel estimation value; and

20 a power calculation unit for calculating power of the transmit-data signal and power of the control-data signal after the channel compensation thereof and calculating a power ratio representing the ratio of the calculated power of the transmit-data signal to the calculated power of the control-data signal.

25 2. A spread-spectrum signal receiver for receiving a signal obtained by rendering transmit data and control data, which have been modulated at powers that differ from each other, into signals that do not influence each other, multiplexing these signals and transmitting the multiplexed signal, the apparatus comprising:

00572694-012501

a despreader for despread a receive signal to thereby demodulate a control-data signal and a transmit-data signal;

5 a channel estimation unit for deriving a channel estimation value from a pilot signal that is contained in the despread control-data signal;

a channel compensation unit for performing channel compensation of the transmit-data and control-data signals based upon the channel estimation value;

10 a power calculation unit for calculating power of the transmit-data signal and power of the control-data signal after the channel compensation thereof and calculating a power ratio representing the ratio of the calculated power of the transmit-data signal to the 15 calculated power of the control-data signal;

a signal-level changing unit for raising, on the basis of the power ratio, the level of whichever of the signals has the lower power; and

20 a decoder for executing decoding processing based upon the signal the level of which has been changed by said signal-level changing unit.

3. The receiver according to claim 2, wherein said signal-level changing unit raises the level of the transmit-data signal if the power ratio of transmit-data 25 signal power to control-data signal power is less than 1 and raises the level of the control-data signal if the power ratio is greater than 1.

4. A spread-spectrum signal receiver for receiving a

0926984 012504

transmit signal obtained by rendering transmit data and control data, which have been modulated at powers that differ from each other, into signals that do not influence each other and multiplexing these signals, the
5 apparatus comprising:

a despreader for despreading a receive signal to thereby demodulate a control-data signal and a transmit-data signal;

10 a channel estimation unit for deriving a channel estimation value from a pilot signal that is contained in the control-data signal;

a channel compensation unit for performing channel compensation of the transmit-data and control-data signals based upon the channel estimation value;

15 a power calculation unit for calculating power of the transmit-data signal and power of the control-data signal after the channel compensation thereof and calculating a power ratio representing the ratio of the calculated power of the transmit-data signal to the
20 calculated power of the control-data signal;

a decision unit for raising, on the basis of the power ratio, the level of whichever of the signals has the lower power, leaving unchanged the level of whichever of the signals has the higher power, and

25 outputting control data and transmit data upon rendering a hard decision or soft decision based upon the signals of the changed level and the unchanged level;

means for changing replica reliability RC1 of the

09769884-002501

transmit data and replica reliability RC2 of the control data based upon the power ratio; and

5 a first replica generator for generating a replica of transmit data on the transmit side by multiplying the transmit data, which is output from said decision unit, by the replica reliability RC1 conforming to the power ratio, and for generating a replica of control data on the transmit side by multiplying the control data, which is output from said decision unit, by the replica

10 reliability RC2 conforming to the power ratio.

5. The apparatus according to claim 4, further comprising:

means for changing replica reliability RC of the transmit signal based upon the power ratio;

15 means for replicating the transmit signal by spreading the replicas of the transmit data and control data using spreading codes on the transmit side; and a second replica generator for generating a replica of the transmit signal by multiplying the replicated transmit signal by the replica reliability RC conforming to the power ratio.

20